

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P801868/WO/1	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/EP2004/009678	International filing date (<i>day/month/year</i>) 31.08.2004	Priority date (<i>day/month/year</i>) 19.09.2003	
International Patent Classification (IPC) or national classification and IPC G01C3/08, G01S11/12, H04N5/33, B60R1/00, B60K31/00, G08G1/16			
Applicant DAIMLERCHRYSLER AG			

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of _____ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/EP2004/009678

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

 - international search (Rule 12.3 and 23.1(b))
 - publication of the international application (Rule 12.4)
 - international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

the international application as originally filed/furnished
 the description:
 pages 1-10 _____ as originally filed/furnished
 pages* _____ received by this Authority on _____
 pages* _____ received by this Authority on _____
 the claims:
 nos. 1-14 _____ as originally filed/furnished
 nos.* _____ as amended (together with any statement) under Article 19
 nos.* _____ received by this Authority on _____
 nos.* _____ received by this Authority on _____
 the drawings:
 sheets 1/1 _____ as originally filed/furnished
 sheets* _____ received by this Authority on _____
 sheets* _____ received by this Authority on _____
 a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. The amendments have resulted in the cancellation of:

the description, pages _____
 the claims, nos. _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____
4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

the description, pages _____
 the claims, nos. _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1–14	YES
	Claims	_____	NO
Inventive step (IS)	Claims	1–14	YES
	Claims	_____	NO
Industrial applicability (IA)	Claims	1–14	YES
	Claims	_____	NO

2. Citations and explanations (Rule 70.7)

Reference is made to the following documents:

- D1: EP-A-1 245 443 (HONDA MOTOR CO LTD)
 2 October 2002 (2002-10-02)
- D2: EP-A-1 339 228 (BAYERISCHE MOTOREN WERKE AG)
 27 August 2003 (2003-08-27).

Novelty:

- 1.1 Document D1, considered to be the closest prior art, discloses a system with a triangulation device as well as a distance-gauging method for use in a vehicle, using two infra red cameras, the IR image captured by one of the two cameras being transformed and displayed to the driver as a grey scale image on a display inside the vehicle (see D1, paragraphs [0051]–[0054], [0070], [0102] and figures 12 and 21 B). The calculated distance of a detected object is used for collision warning (paragraph [0008]).
- 1.2 Independent claims 1 and 11 differ from the above prior art in that one of the two cameras is

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Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

sensitive to the visible spectrum. The subject matter of said claims is therefore novel.

Inventive step:

- 2.1 The problem addressed by D1 can be seen to reside in the fact that the image captured in the infrared range is a thermal image which corresponds to a temperature distribution in the environment and, in consequence, colour information that is important to the driver - for example the colours of lights or headlights of other cars, or the colours of traffic signals - cannot be provided. Thus, the problem is that of improving the subject matter of D1 in this regard. (The system according to the claim 1 concerns a night vision device, even though no reference is made to display means.)

- 2.2 D1 contains nothing to suggest modifying the known system or the known method as per claims **1** and **11**, respectively, in order to solve the problem of interest. A person skilled in the art will therefore seek a solution to said problem in the field of night vision devices for vehicles. D2 discloses such a device, mentions the same problem (D2, paragraph [0007]) and discloses the fusion of two images, the first image being an IR image and the second being a colour image captured in the visible spectrum (D2, paragraphs [0013],

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[0020], [0022]). (In this respect, the disclosure according to D2 goes beyond the documents cited in the application, namely US5001558 and US6150930, since in the case of the two cameras according to D2 a defined spatial interval is required for determining distance). The two cameras used in D2 are mutually adjacent, but do not observe the field from the same angle of vision. Although D2 mentions that the complexity of image-processing is reduced if the cameras are close together, this certainly does not constitute a fundamental restriction. However, the question that must be addressed is how a person skilled in the art would combine the two documents. If the camera for the visible spectrum according to D2 is merely added, in an obvious manner, to one of the two infra red cameras from D1, a person skilled in the art will not arrive at the subject matter of claim 1. The other possibility for a person skilled in the art would be to replace one of the two infra red cameras from D1 with a camera for visible light. However, as a consequence, the brightness values of a single object might be different in the images obtained by the two different cameras. The identification of an object in the two images would then be much more complex and, in consequence, a person skilled in the art would not consider this possibility. Thus, such a combination of the two documents, D1 and D2, is not obvious and, in consequence, the subject matter of the aforementioned claims involves an inventive step.

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Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

2.3 Claims **2-10** and **12-14** are dependent on claims **1** and **11**, respectively, and therefore also satisfy the requirements of the PCT in respect of novelty and inventive step.